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In the June 2001 issue:
Tuberculosis in Seattle & King County – 2000

TUBERCULOSIS IN SEATTLE & KING COUNTY - 2000

Reported cases of tuberculosis in Seattle & King County increased from 104 in 1999 to 127 in 2000. Although the number of cases reported in 2000 was 22% higher than that reported in 1999, Figure 1 shows that the trend of tuberculosis in Seattle & King County has been relatively stable over the past decade. Of the 127 TB cases, 68 (54%) were male and 59 (46%) were female; age at diagnosis ranged from 2 to 89 years. The majority of cases (79%) were born outside of the United States; only 21% were born in the U.S. Eight (6%) of the cases died; one was diagnosed post mortem, and seven died during the course of treatment.

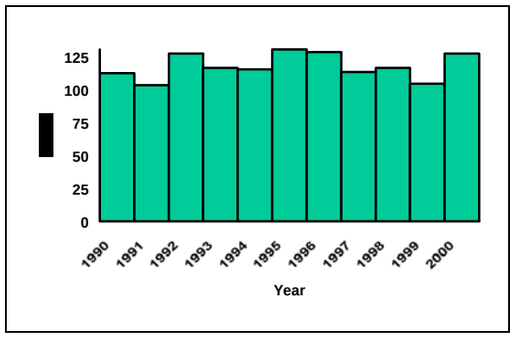


Figure 1. TB Cases - Seattle & King County, 1990-2000

The incidence rate of tuberculosis in Seattle & King County in 2000 was 7.3 cases/100,000 population, compared with a rate of 4.4 cases/100,000 for the State of Washington and 5.8 cases/100,000 for the United States as a whole. In Seattle & King County males had a rate of 8.0 cases/100,000; females, a rate of 6.7 cases/100,000. The rates of tuberculosis in persons of non-white races were 6- to 17-fold higher than that in persons of white race (Table 1).

Race/ Ethnicity	Cases	Rate per 100,000
White/non-Hispanic	23	1.7
Black/non-Hispanic	34	38.2
All Races, Hispanic	13	22.7
American Indian/ Alaska Native	3	16.7
Asian or Pacific Islander	54	32.5

Table 1. Rate of TB by race, Seattle & King County, 2000

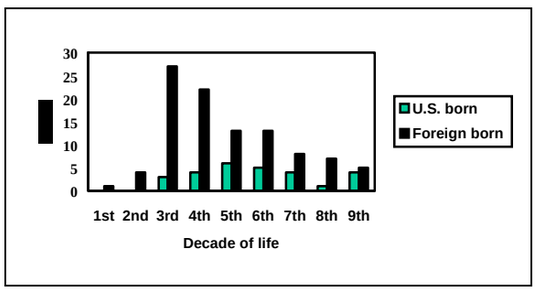
The incidence rate of TB in residents of Seattle (14 cases/100,000) was more than three times that of residents of King County living outside of Seattle (4.2 cases/100,000). Analysis of cases by zip code of residence indicated that downtown Seattle and the neighborhoods immediately east and south of downtown Seattle (Georgetown and Rainier Valley) continued to have the highest rates of tuberculosis. These neighborhoods, home to 6% of county residents, were home to 30% of county TB cases, and had an aggregate incidence rate of TB of 34/100,000, almost 5 times that of Seattle & King County as a whole.

Birth in a geographic area where TB is endemic was again in 2000 the most important risk factor for TB, accounting for 100 cases (79%). Foreign-born cases had emigrated from 27 countries: 16 cases from Vietnam; 13 each from the Philippines and Ethiopia; 7 from Mexico; 5 from China and 3 from Eastern Europe, including countries of the former Soviet Union.

One striking difference between U.S.-born and foreign-born cases was the age at onset of tuberculosis. Figure 2 shows that foreign-born TB cases occurred at much younger ages, with the mode in the third decade of life. TB is striking these new residents in the productive, childbearing years of life, when there are usually young children in the household. In this setting it is particularly important that prompt, thorough contact investigations of cases of pulmonary TB be conducted in order to protect children from significant exposure.

Figure 2. TB cases by age at onset, Seattle & King County, 2000.

During the past several years in Seattle & King



County there has been a steady increase in tuberculosis cases among African immigrants (Figure 3). Whereas in the early 1990's fewer than 10 cases of tuberculosis were reported in African immigrants each year, beginning in 1998 the number of reported cases increased each year. In 2000, 25 cases of active tuberculosis were reported in African immigrants. Countries of origin for those cases were Ethiopia (13), Somalia (5), Zambia (2), Zaire (1), Uganda (1), Malawi (1), Liberia (1), and Kenya (1). These 25 cases represent 20% of Seattle & King County's total tuberculosis morbidity for the year

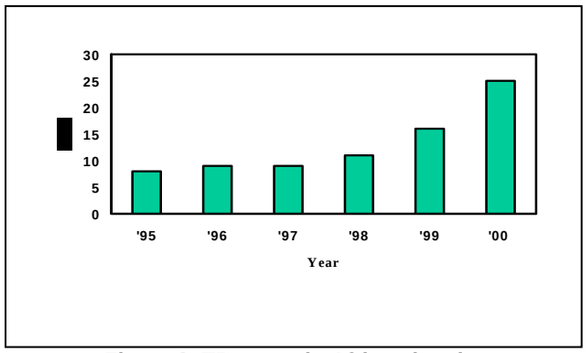


Figure 3. TB cases in African immigrants, Seattle-King County 1995-2000.

2000. For the first time, the percentage of Seattle-King County cases occurring among the African-born surpassed the percentage of Southeast Asian-born cases (Figure 4).

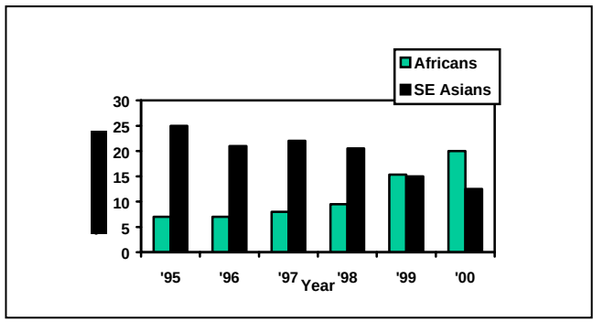


Figure 4. Percent of TB cases in two immigrant/refugee groups, Seattle and King County 1995-2000.

Among other risk factors for TB in Seattle & King County, 16 patients (13%) were homeless, 7 of whom were foreign-born. Three of the homeless cases also had HIV infection. Three cases, including two foreign-born persons, were contacts of recent TB cases. Altogether, there were six cases with HIV co-infection, four of whom were foreign-born cases from Guatemala, Nicaragua, Malawi, and Zaire.

The site of infection for 2000 TB cases was pulmonary for 81 cases (64%), both pulmonary and extra-pulmonary for 11 cases (9%), and extra-pulmonary for 35 (28%). Among pulmonary cases, 83 (90%) were culture-positive, and 39 (42%) were sputum smear-positive. Among the 46 total extra-pulmonary cases, 13 were lymphatic, 8 were pleural, 5 were bone/joint; 2 were miliary.

Drug susceptibility testing was performed on all 105 (83%) culture-positive cases. Nine isolates exhibited a significant level of drug resistance, eight of these from foreign-born cases. Seven isolates (7%) were resistant to isoniazid but susceptible to rifampin; none was resistant to rifampin alone. Two cases in immigrants from the Philippines and Mexico were resistant to both isoniazid and rifampin, meeting the definition for multi-drug resistant tuberculosis (MDR-TB). Significant drug resistance occurred in 8% (8/100) of foreign-born culture-positive cases and in 4% (1/27) of U.S.-born cases. The incidence of drug resistance in Seattle & King County TB cases has remained relatively stable in recent years. The level of resistance to TB drugs can be an important indicator of the quality of TB control in a community. A rising rate of drug resistance generally indicates suboptimal follow-up of patients and a low rate of completion of treatment, leading to MDR-TB and increased person-to-person spread of TB.

During 2000, the TB Control Program received 252 reports of suspected TB cases. Washington Law requires that patients with suspected TB be reported because important public health interventions may be indicated immediately, even before the diagnosis is certain. Reporting of suspected tuberculosis cases, therefore, is both an indicator of the awareness of TB among medical practitioners in Seattle & King County and an indicator of work burden for the TB Program Staff. Reported suspect TB cases often require consultation, contact investigations, and monitoring of clinical status, cultures, and compliance with treatment, even though in 2000 only half (127/252) of reported suspects proved to be actual cases of TB.

Disease Reporting (area code 206)
AIDS……296-4645
Communicable Disease…296-4774
STDs……731-3954
Tuberculosis……731-4579
24-hr Report Line……296-4782

Hotlines:
CD Hotline……296-4949
HIV/STD Hotline……205-STDS
http://www.metrokc.gov/health

Reported Cases of Selected Diseases, Seattle & King County, 2001

NR= Not reportable in 2000	Cases Reported In May		Cases Reported Through May	
	2001	2000	2001	2000
AIDS	12	24	143	91
Campylobacteriosis	34	26	125	117
Cryptosporidiosis	4	NR	10	NR
Chlamydial infections	453	375	1788	1869
Enterohemorrhagic *E. coli* (non-O157)	0	NR	3	NR
***E. coli* O157: H7**	3	3	6	7
Giardiasis	10	20	55	94
Gonorrhea	113	94	622	452
***Haemophilus influenzae* (cases <6 years of age)**	0	0	0	0
Hepatitis A	2	10	7	56
Hepatitis B (acute)	2	5	15	18
Hepatitis B (chronic)	45	NR	217	NR
Hepatitis C (acute)	2	1	7	3
Hepatitis C (chronic, confirmed/probable)	123	NR	589	NR
Hepatitis C (chronic, possible)	47	NR	225	NR
Herpes, genital	72	64	329	359
Measles	0	0	12	2
Meningococcal Disease	0	1	4	9
Mumps	0	0	0	3
Pertussis	5	41	7	113
Rubella, congenital	0	0	0	0
Rubella	0	1	0	1
Salmonellosis	31	24	97	88
Shigellosis	8	9	28	108
Syphilis, congenital	0	0	0	0
Syphilis, late	9	2	20	15
Syphilis	6	6	27	30
Tuberculosis	13	11	48	48